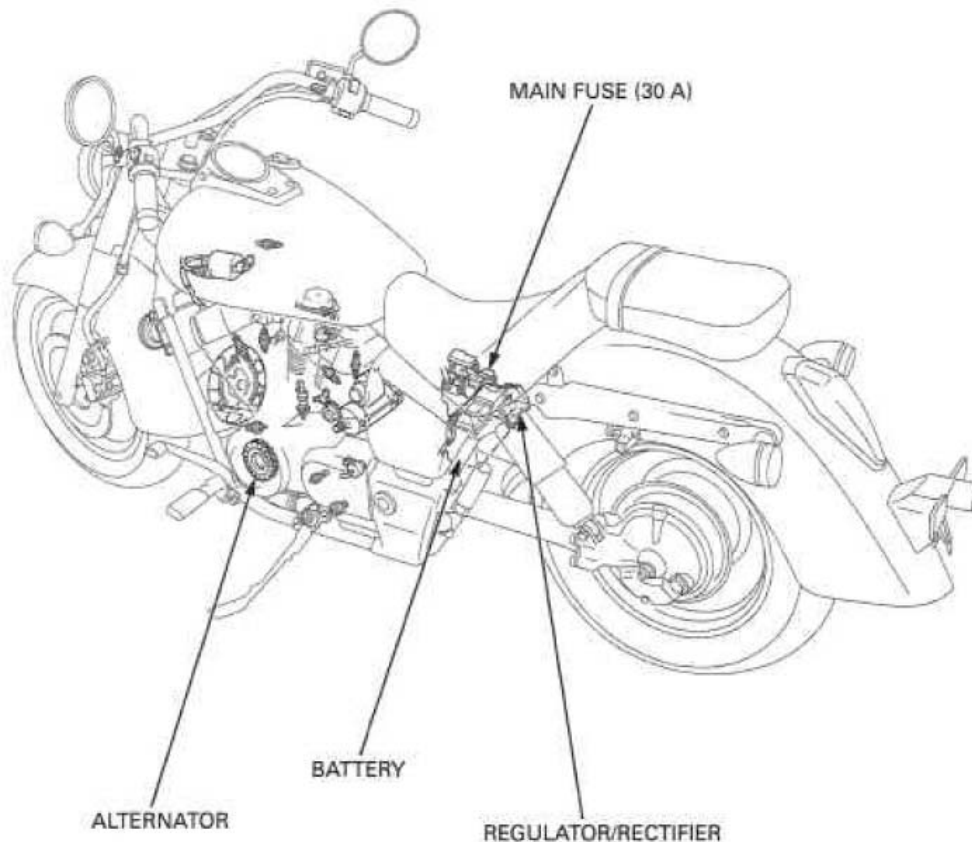


Determining a Bad Motorcycle Battery

Collected from various forum discussions

It is perfectly safe to jump start a bike off a non-running car, it just can potentially do bad things to have the car running. Our electrical systems are not prepared to deal with the amount of juice that a cars alternator can put out if there is a voltage spike due to a sudden load or unload situation. I have jumped my bike, the key was I hooked the jumper cables up to a vehicle that was turned off. If you need to charge your battery off of a jumper vehicle, the other vehicle can be started, but **DO NOT** try to start the bike when it is hooked up to a running automobile. Any voltage spikes resulting from the bike starter engaging and disengaging can cause lots of problems in ignition modules and voltage regulators on our bikes. Many people do not recommend jumping a bike for this reason. If a jump pack is available, that is definitely the best option.





This is a picture of a bike with the right side cover removed.

Remove right side cover and locate the positive battery cable. It is the one with the red boot coming out from under the seat going to the main fuse block in the center.

You should see two wires hooked up side by side at the main fuse block. The black rubber boot has been removed to make it easier to see.

Hook the positive (+) lead to the one on the right. (Either will actually work, but do not connect the two together.)

Hook the negative (-) lead up to a good ground. Try one of the bolts on the exhaust bracket under the muffler, or one of the engine mount bolts on the right side of the picture. Any metal surface that isn't painted will work, that doesn't leave too many options though.

Now hook up the other ends of the cables to the jump vehicle. Make sure the bike key is in the off position. Hook the positive up first, then the negative. Make sure the car is turned off, and try to start the bike. If it needs more juice, turn the bike key off and start the car, let it run for 5-10 minutes. Then turn the car off and try the bike.

The hardest part of this whole procedure is getting a good connection with the jumper cables. The one time I had to jump my bike it took several tries to get a good connection with the negative cable. If necessary while you are trying to crank the bike wiggle the jumper cable clamp until you hear the starter engage.

The preferred method is always to use a trickle charger on the battery, but this will not start your bike. I do recommend charging the battery up as soon as possible with a charger to avoid overworking the anemic stock alternator. FWIW, you can hook a charger up to the same location much easier than you can remove the seat.

I learned this the hard way too. I left the key on for a few minutes, and sure enough, it wouldn't start. I tried to coast start it, but the battery was too weak to give adequate spark, so all I did was end up at the end of my drive instead of right outside the garage door where I could have put the battery charger on it. Definitely not one of my brighter moments!

Symptoms of a bad motorcycle battery:

Won't hold a charge after being recharged.

Doesn't provide enough voltage to turn the bike over or the bike suddenly dies and won't restart/turn over.

Measuring the battery with a voltmeter (with the engine and ignition key off) will also indicate its condition.

Percentage of Charge	12 Volt Battery Voltage	24 Volt Battery Voltage	Specific Gravity
100	12.70	25.40	1.265
95	12.64	25.25	1.257
90	12.58	25.16	1.249
85	12.52	25.04	1.241
80	12.46	24.92	1.233
75	12.40	24.80	1.225
70	12.36	24.72	1.218
65	12.32	24.64	1.211
60	12.28	24.56	1.204
55	12.24	24.48	1.197
50	12.20	24.40	1.190
45	12.16	24.32	1.183
40	12.12	24.24	1.176
35	12.08	24.16	1.169
30	12.04	24.08	1.162
25	12.00	24.00	1.155
20	11.98	23.96	1.148
15	11.96	23.92	1.141
10	11.94	23.88	1.134
5	11.92	23.84	1.127
Discharged	11.90	23.80	1.120

** Specific Gravity is measured by a float-type hydrometer

With the bike NOT running your battery should show 12.7 volts or damn close. (See chart above) With the bike RUNNING you should see 14.1 volts on the battery. (You'll likely need to goose the throttle a little).

The Yuasa YTZ12S battery is rated at 11 Amp-Hours (AH) with 210 Cold Cranking Amps (CCA). If the battery has been sitting for 10 minutes or more (i.e., it's "settled down") and it reads 12.20 Volts, it has a 50% state of charge. I would think this means it has half of its rated capacity at full charge (11 AH), or 5.5 AH of life left before it's completely dead.

Without knowing the amp draw of the starter motor, we can't take this further although it's probably safe to say if the battery is in a 50% state of charge (12.20 V) you should be able to crank the engine and start it. But you sure won't be cranking long.

A good rule of thumb is to perform the following test with a voltmeter placed across the battery terminals. If you crank the starter motor and the voltage drops below 9.5 Volts while doing so, it's time for a new battery.

